43 CFR 3809
RECLAMATION COST CHECKLIST

NOTE: This checklist is provided to assist the operator in calculating the engineering and environmental costs required to properly stabilize and reclaim an area disturbed by mineral exploration and/or mining operations. The checklist is designed to accompany the RECLAMATION COST ESTIMATION SUMMARY SHEET. It is not all inclusive, but is intended to serve as a reminder of issues that should be considered.

In all cases, the operator should submit a topographic map of appropriate scale with the proposed operations and sites of disturbance clearly depicted upon it. Accompanying the map is a document containing the actual detailed calculation of the costs of the proposed reclamation.

The notice or plan of operations cannot be processed until the map and detailed calculations are submitted. When requested, the BLM will assist the operator in obtaining a proper reclamation cost estimate.

Access roads and drill pads

1. Mobilization and demobilization
2. Recontouring or regrading to approximate the original topography as closely as possible.
3. Removing culverts.
4. Ripping or scarifying the surface.
5. Water diversion construction.
6. Restoring or stabilizing drainage areas or stream beds.
7. Revegetation

Drill hole and well abandonment

7. These are the requirements given in NAC 534. The cost of plugging, capping, and segregation of the hole from the ground water system is to be considered. Drill holes that will be plugged as per NAC 534 with onsite drilling equipment do not have to be considered for bonding. Drill holes that will not be plugged as per NAC 534 with onsite drilling equipment must use a third party reclamation cost estimate and be bonded. Drill holes that will be "mined through" within six months of drilling completion by the proposed operation do not have to be considered for bonding.
8. Water wells, monitoring wells and piezometers are abandoned in accordance with NAC 534 and are part of the reclamation cost estimate and bonding process.

Trenches, pits, and adits

1. Mobilization and demobilization.
2. Recontouring or regrading to approximate the original topography as closely as possible.
3. Revegetation.
4. Securing portals from public entry.

Waste rock dumps, overburden, and interburden storage areas

1. Encapsulating, mixing, or other engineered placement method in controlling acid rock drainage (ARD) migration.
2. Recontouring and regrading to approximate the surrounding topography as closely as possible to enhance stability, reduce susceptibility to erosion, facilitate efforts to establish vegetation.
3. Diverting run-on.
4. Covering with rock, clay, topsoil, other growth medium or other cover material.
5. Revegetation.

Dams for tailings ponds.

1. Covering with rock, clay, topsoil, other growth medium or other cover material.
2. Revegetation.
3. Rendering the dam incapable of storing any mobile fluid in a quantity which could pose a threat to the stability of the dam, or to the public safety.
4. Containment basins and water treatment facilities for leakage or outflow of effluent.

Impoundment for tailings.

1. Regrading to promote run-off and reduce infiltration.
2. Covering with waste rock, clay, topsoil, other growth medium or other cover material.
3. Revegetation.
4. Diverting run-off.
5. Containment basins and water treatment facilities for leakage or outflow of effluent.

Heaps from leaching.

1. Cost of maintaining proper fluid management to prevent overflow of solution ponds through premature cessation or abandonment of the operation (six month direct cost estimate for recirculating process fluids). Include the cost of a Process Fluid Inventory, which typically runs from $15,000 to $35,000, depending on site complexity.
1. Rinsing, detoxification and neutralization procedures as approved in the plan of operations.
2. Containment and treatment of outflows of residual chemicals or fluids from the heaps, including any disposal of surplus or drain down water. Include all engineering, development and reclamation costs.
1. Diverting run-off.
2. Regrading to enhance structural stability, promote run-off, reduce infiltration, and control erosion.
6. Covering with waste rock, clay, topsoil, other growth medium or other cover material.
7. Stabilization and revegetation.

Solution ponds, settling ponds, and other non-tailings impoundments.

1. Backfilling and grading as approved in the plan of operations.
2. Restoring the pre-disturbance surface water regime, if appropriate.
3. Properly dispose of process pond sludge.

Building foundations, facilities, structures and other equipment.

1. Demolishing costs to the level of the foundation and burying costs of the demolished items on site, in conformance with applicable solid waste and hazmat disposal requirements.
2. Salvaging and sale costs. No provision for salvage value or credit is permitted.
3. Off-site disposal costs of "1" above, in conformance with applicable solid waste disposal and hazmat requirements.
4. Costs of continued use in a manner that is consistent with the proposed post mining land use.

Open pit mines.

1. Providing for the public safety.
2. Stabilizing pit walls or rock faces where required for public safety.
3. Constructing and maintaining berms, fences, or other means of restricting public access.
4. Backfilling and grading as approved in the plan of operations
5. Costs of creating and maintaining a lake for recreational, wildlife enhancement, or other beneficial use as approved in the plan of operations.
6. Revegetation.

Underground mines.

1. Sealing shafts, adits, portals, and tunnels to prevent underground access.
2. Constructing and maintaining berms, fences, or other means of restricting access.

Revegetation

1. Application of top soil or other growth medium.
2. Seed bed preparation.
3. Selection of appropriate species of seeds or plants (consult BLM staff specialist).
4. Soil amendments such as fertilizers, mulches, or other compounds to assist in plant growth.
5. Planting or seeding (equipment, personnel, cost of seeds/plants).

Site Maintenance and Site Monitoring

1. Site monitoring costs as required in the approved plan of operations.
2. Monitoring well costs for heaps, leach fields, bioreactors and tailings ponds as required by the NDEP based on a minimum of five years monitoring.

(March 2002)